JACKSON SYSTEMS
Controls Done Right™

COMFORT SYSTEM™

T-32-TS Touchscreen Thermostat

Installation Manual

TABLE OF CONTENTS

Introduction **4**
Getting Started **5**
Installing The Thermostat **6**
- **Disassembly** **6**
- **Thermostat Location** **6**
- **Mounting The Subbase** **6, 7**
- **Terminal Designations** **8**

Setting The System Switches **9**
System Switch Functions **10**
Installing The Batteries **11**
Typical System Wiring Diagrams **12**
- **Heat Only (Gas)** **12**
- **Heat Only (Electric)** **13**
- **Cool Only** **14**
- **1 Heat / 1 Cool (Gas)** **15**
- **2 Heat / 2 Cool (Gas)** **16**
- **2 Heat / 1 Cool Heat Pump** **17**
- **3 Heat / 2 Cool Heat Pump** **18**
- **2 Heat / 1 Cool Fossil Fuel** **19**
- **3 Heat / 2 Cool Fossil Fuel** **20**

TABLE OF CONTENTS

Installer Setup Menu 21
- **Entering The Setup Menu** 21
- **Selecting The Program** 22
- **Selecting Program Days** 23
- **Selecting Temporary Program Override** 24
- **Selecting Programmable Fan Mode** 25
- **Selecting Mode** 26
- **Selecting Touchscreen Lock Options** 27
- **Selecting The Cooling Setpoint Limit** 28
- **Selecting The Heating Setpoint Limit** 29
- **Selecting The Temperature Display** 30
- **Selecting The Time Format** 31
- **Selecting The Setpoint Display Option** 32
- **Selecting Back Light Option** 33
- **Selecting Adaptive Recovery Option** 34
- **Selecting Filter Reminder** 35
- **Selecting First Stage Heating And Cooling Differential Option** 36
- **Selecting Second Stage Heating And Cooling Differential Option** 37
- **Selecting Third Stage Heating Differential Option** 38
- **Selecting Internal Or Indoor Remote Sensor Calibration Option** 39
- **Selecting Remote Sensor Option** 40
- **Selecting Equipment Configuration** 41

TABLE OF CONTENTS

- Selecting Low Balance Point Option 42
- Selecting High Balance Point Option 43
- Selecting Audible Beep Option 44
- Selecting The Factory Default Option 45
- Selecting Daylight Savings Time Option 46

Remote Sensor Installation 47
- Remote Sensors 47
- Indoor Sensor Wiring 47, 48
- Using Multiple Sensors For Temperature Averaging 49
- Outdoor Sensor Wiring 50

Temperature Calibration Chart 51

Testing 52
- Testing Fan Operation 52
- Testing Conventional Heating And Cooling Operation 52, 53
- Testing Conventional Heat Pump Operation 53
- Testing Fossil Fuel Operation 53, 54
- Testing Low Balance Point (Heat Pump or Fossil Fuel) 54
- Testing High Balance Point (Heat Pump or Fossil Fuel) 54, 55

Adaptive Recovery 55

Basic Trouble Shooting 56, 58

T-32-TS Specifications 59

INTRODUCTION

The Comfort System™ T-32-TS is a feature-rich touchscreen thermostat that can be battery powered or hardwired to the HVAC equipment. Using a common sense approach to the installation will ensure this product is installed properly and to the customer's satisfaction. Please take time to read and understand this manual so that installation and testing is performed in an efficient manner.

This manual is to be used in conjunction with the supplied User Manual.

Although great care has been taken in the preparation of this manual, Jackson Systems takes no responsibility for errors or omissions contained herein. It is the responsibility of the installer to ensure that this thermostat and the equipment connected to it operate in a safe and efficient manner.

Due to ongoing product improvements, Jackson Systems reserves the right to change the specifications of the T-32-TS thermostat or its components without notice.
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GETTING STARTED

As with any HVAC project, careful installation is the key to a successful outcome. Tim taken during the installation process will be rewarded with fewer call-backs.

The steps required to install the T-32-TS thermostat are as follows.

1. Read and understand this Installation Manual and User Manual
2. Mount and wire the subbase.
3. Install the batteries.
4. Set the 4 system switches to match the equipment application.
    - Heat / Cool
    - Heat Pump
    - Fossil Fuel
5. Wire optional remote temperature sensor(s).
6. Power the thermostat
7. Set the Advanced Installer settings.
8. Test the thermostat.

INSTALLING THE THERMOSTAT

DISASSEMBLY

There are two release slots located on the bottom of the thermostat. Gently push the flat blade of a small screwdriver into one slot at a time and pry upward until the catch disengages. Carefully swing the thermostat upward and away from the subbase.

THERMOSTAT LOCATION

The T-32-TS should be installed in a location that represents the ambient space temperature. Do not install the thermostat in an area where drafts are present, near the floor, behind doors or on an external wall. Avoid placing the thermostat in areas where the air movement is limited, affected by direct sunlight or other areas not typical of the temperature in the space.

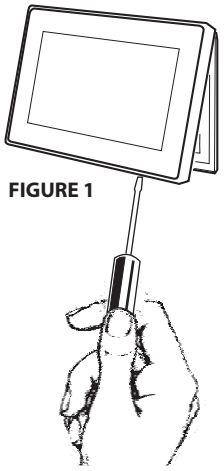


FIGURE 1

MOUNTING THE SUBBASE

When mounting the T-32-TS subbase, be aware that drafts may travel down wall cavities and enter the back of the thermostat through the control wire hole in the wall. It is important to seal the

INSTALLING THE THERMOSTAT

hole to prevent any drafts that might affect the internal temperature sensor. Pull the control wires through the large opening in the thermostat subbase. Next, level and mount the subbase on the wall using the supplied anchors and screws. (Figure 2)

Do not over tighten the mounting screws as the subbase may warp causing the improper seating of the thermostat connecting pins to the terminal blocks.

Use a properly sized screwdriver and back each screw terminal out (counter clockwise) before landing each wire to its dedicated terminal. Do not over tighten the terminal screws. Check to ensure that all wires are landed correctly and dressed properly to prevent any shorts. Refer to Typical System Wiring Diagrams in this manual for proper wiring.

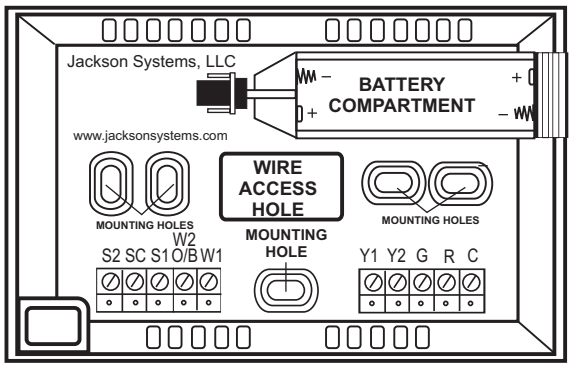


FIGURE 2

INSTALLING THE THERMOSTAT

TERMINAL DESIGNATIONS

TERMINAL	DESIGNATION
S2	Outdoor Sensor
SC	Sensor Common
S1	Indoor Sensor
W2/OB	Second Stage Heat or Reversing Valve
W1	First Stage Heat / Auxiliary / Emergency Heat
Y1	First Stage Cool or First Stage Compressor
Y2	Second Stage Cool or Second Stage Compressor
G	Fan
R	24 VAC Hot
C	24 VAC Common

SETTING THE SYSTEM SWITCHES

The T-32-TS contains a set of four system switches located on the thermostat printed circuit board. (Figure 3) The switches are used to match the thermostat operation and relay outputs with the HVAC system requirements. Refer to the system switch functions on the next page to properly configure the thermostat.

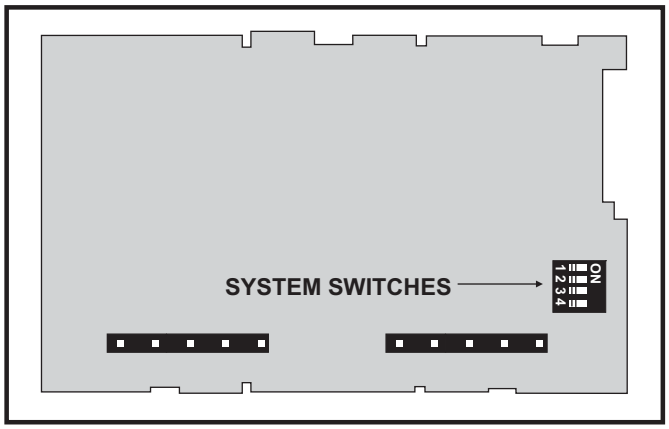


FIGURE 3

SYSTEM SWITCH FUNCTIONS

Switch 1 - Equipment Type	Switch 1 sets the equipment type. For conventional heat / cool equipment, set the switch to the OFF position (factory default). For heat pump equipment set the switch to the ON position.
Switch 2 - Fan or Reversing Valve	**When Switch 1 is OFF** For Gas heat, set the switch to the OFF position (factory default). For electric heat, set the switch to the ON position. **When Switch 1 is ON** For 'O' reversing valve, set the switch to the OFF position (factory default). For 'B' reversing valve, set the switch to the ON position.
Switch 3 - Short Cycle Timer	For 4 minute short cycle protection, set switch to the OFF position (factory default). To disable short cycle protection, set switch to the ON position.
Switch 4 - Fossil Fuel Mode	For conventional heat pump equipment, leave switch in the OFF position (factory default). For fossil fuel equipment, set switch to the ON position.

INSTALLING THE BATTERIES

The T-32-TS comes with two AAA batteries. Even if the thermostat is hardwired, battery backup is recommended to maintain the real-time clock in the event of a power failure. All other memory is non-voilatile in the event of battery or primary power loss. Press in on the battery access compartment and slide the drawer out. Install the two AAA batteries matching the + and - orientation. Push the battery compartment in until it clicks shut. When the batteries are properly installed, the touchscreen display will light up. (Figure 4)

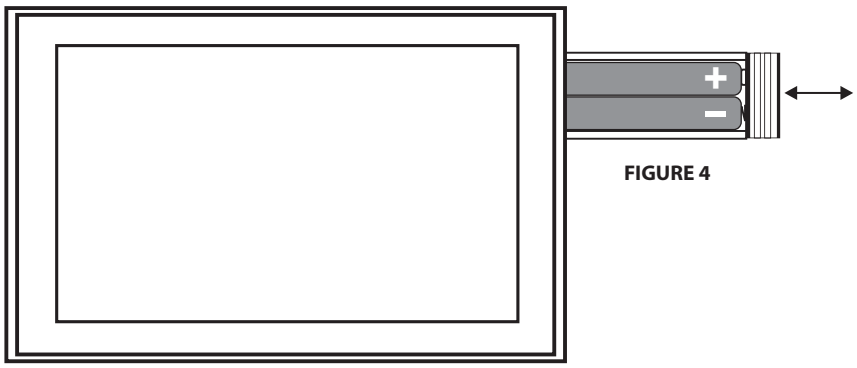
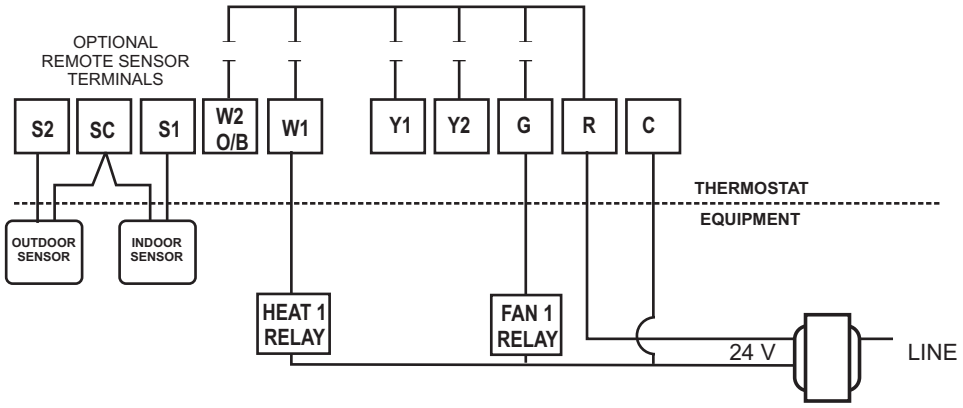


FIGURE 4

TYPICAL SYSTEM WIRING DIAGRAMS

HEAT ONLY (GAS)

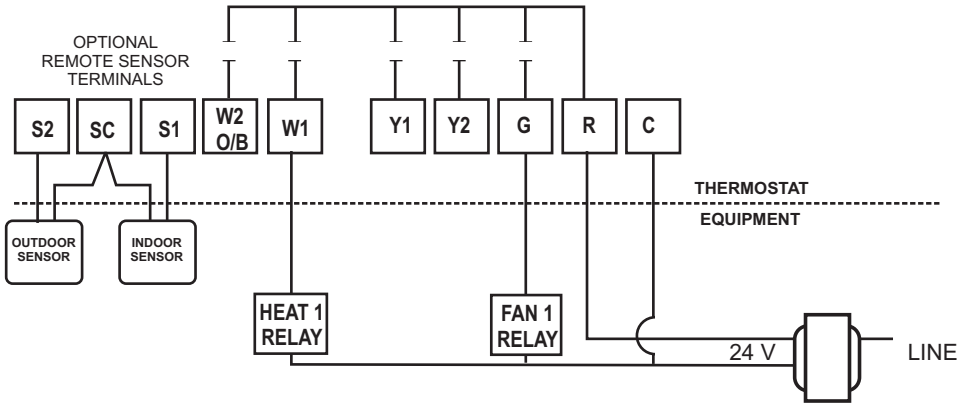


Switch Settings

Switch 1 = OFF	Heat / Cool
Switch 2 = OFF	Equipment controls fan on call for heat
Switch 3 = OFF	Short Cycle Protection (No affect on setup)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

HEAT ONLY (Electric)

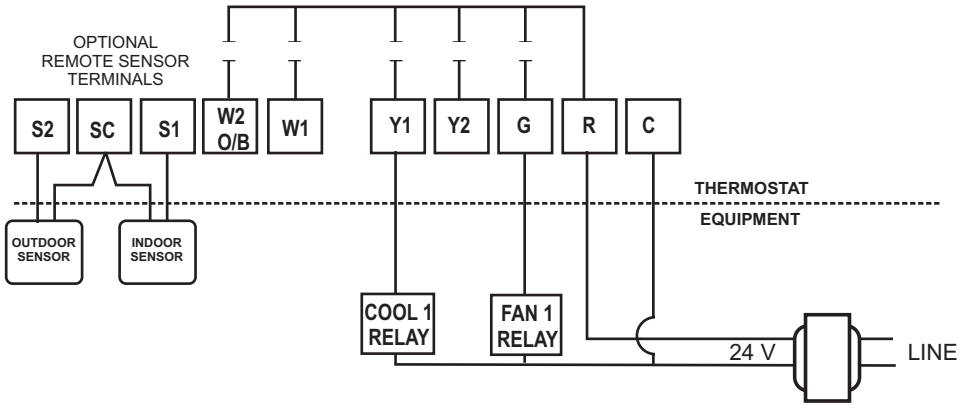


Switch Settings

Switch 1 = OFF	Heat / Cool
Switch 2 = ON	Thermostat controls fan on call for heat
Switch 3 = OFF	Short Cycle Protection (No affect on setup)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

COOL ONLY

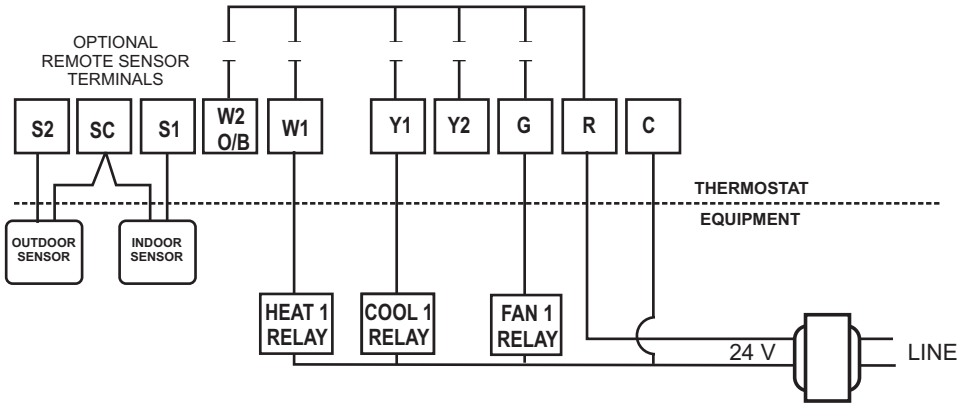


Switch Settings

Switch 1 = OFF	Heat / Cool
Switch 2 = OFF	Fan energized on call for cooling
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

1 HEAT / 1 COOL (GAS)

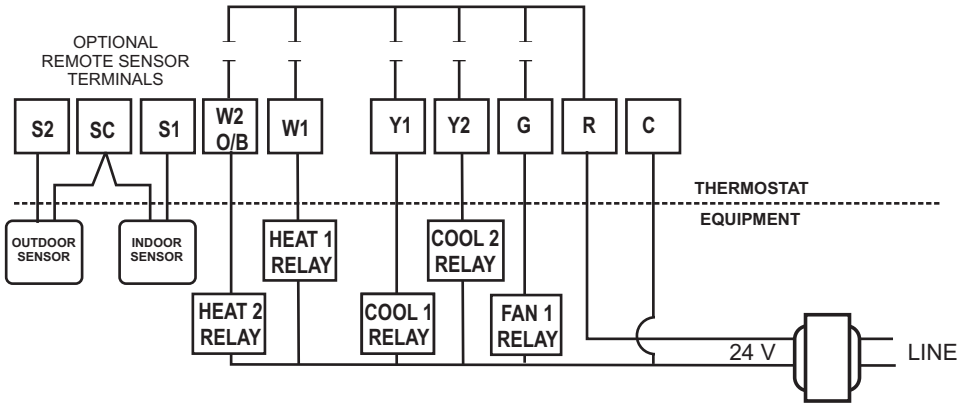


Switch Settings

Switch 1 = OFF	Heat / Cool
Switch 2 = OFF	Fan energized on call for cooling
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

2 HEAT / 2 COOL (GAS)

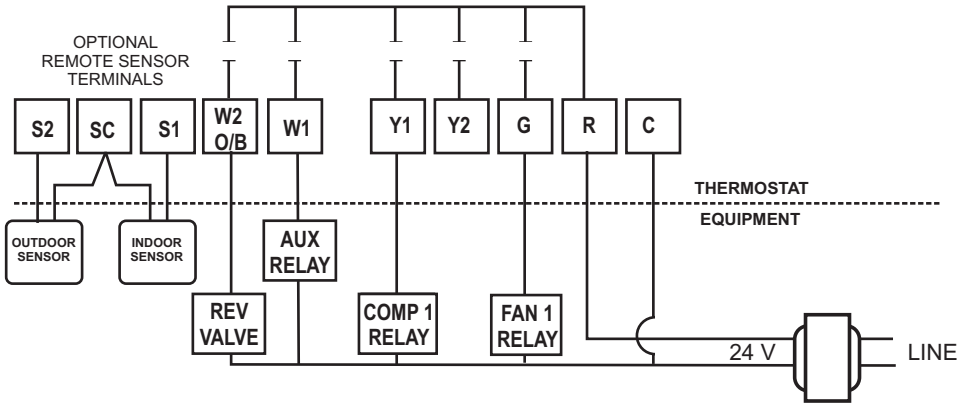


Switch Settings

Switch 1 = OFF	Heat / Cool
Switch 2 = OFF	Fan energized on call for cooling
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

2 HEAT / 1 COOL (HEAT PUMP)

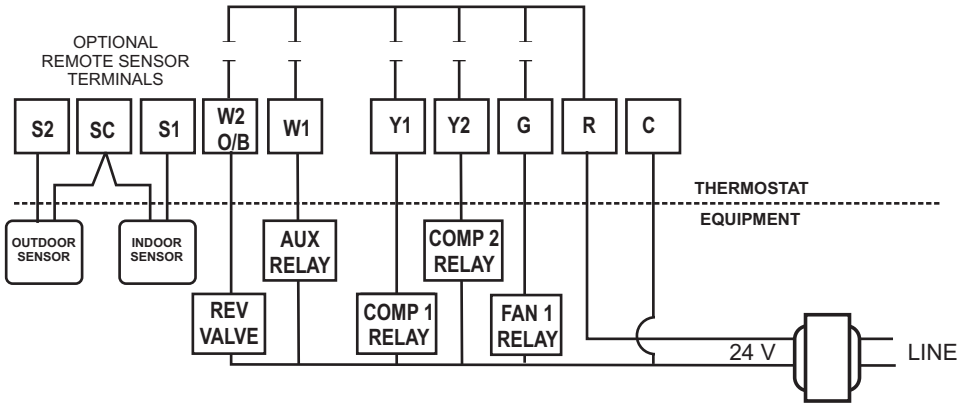


Switch Settings

Switch 1 = ON	Heat Pump
Switch 2 = OFF/ON	OFF = 'O' ON = 'B'
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

3 HEAT / 2 COOL (HEAT PUMP)

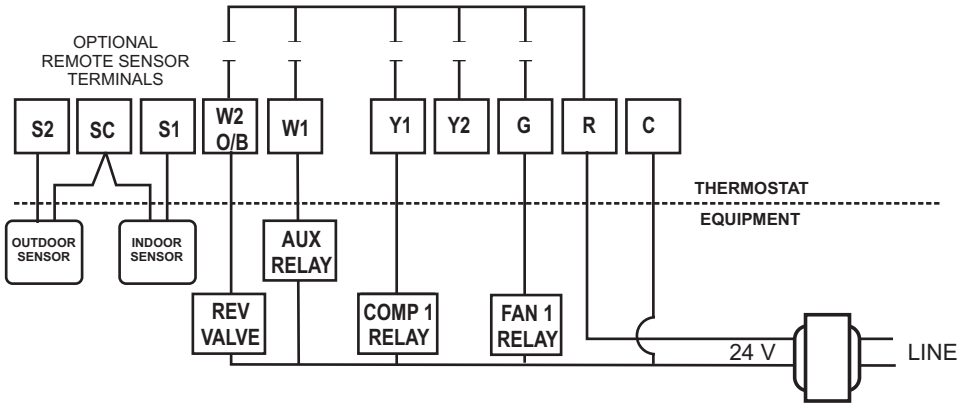


Switch Settings

Switch 1 = ON	Heat Pump
Switch 2 = OFF/ON	OFF = 'O' ON = 'B'
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = OFF	Leave OFF

TYPICAL SYSTEM WIRING DIAGRAMS

2 HEAT / 1 COOL (FOSSIL FUEL)

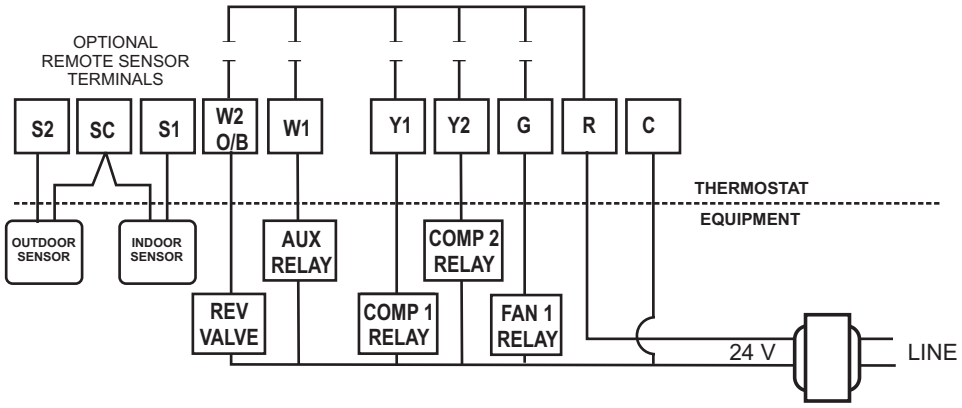


Switch Settings

Switch 1 = ON	Heat Pump
Switch 2 = OFF/ON	OFF = 'O' ON = 'B' Reversing Valve
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = ON	Locks out heat pump when furnace is energized

TYPICAL SYSTEM WIRING DIAGRAMS

3 HEAT / 2 COOL (FOSSIL FUEL)



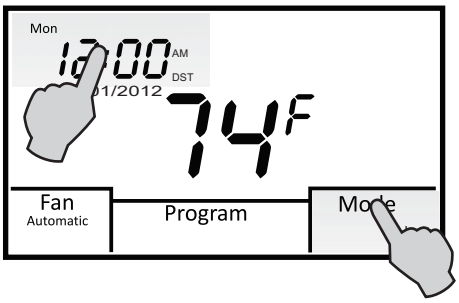
Switch Settings

Switch 1 = ON	Heat Pump
Switch 2 = OFF/ON	OFF = 'O' ON = 'B' Reversing Valve
Switch 3 = OFF	Short Cycle Protection (Recommended)
Switch 4 = ON	Locks out heat pump when furnace is energized

INSTALLER SETUP MENU

ENTERING THE SETUP MENU

Touch and hold both the **Clock** and **Mode** section for 5 seconds to enter the Installer Menu.

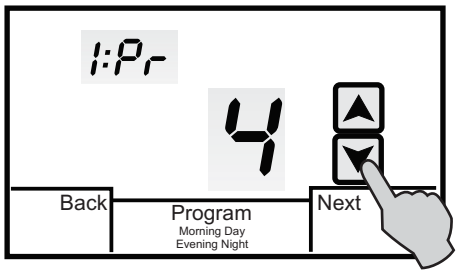


- **To advance through the menu, touch the Mode section.**
- **To backup in the menu, touch the Fan section.**
- **To exit the menu at any time and save changes, touch and hold the Mode section until the display shows normal operation.**

INSTALLER SETUP MENU

SELECTING THE PROGRAM

The first menu 1:PR selects programmable or non-programmable operation. Press the **UP** or **DOWN** arrows to change the selection. The factory default is **4** (4 schedules per day).

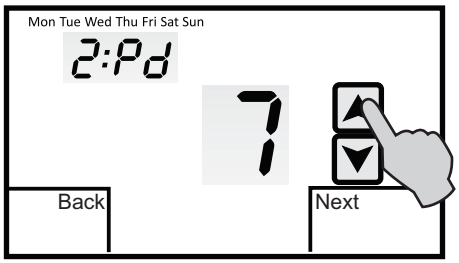


0 = Manual Mode (non-programmable)
2 = 2 Schedules Per Day (Day / Night)
4 = 4 Schedules Per Day (Morning / Day / Evening / Night

INSTALLER SETUP MENU

SELECTING PROGRAM DAYS

If menu 1:PR is set to 2 or 4, 2:PD is used to select 5+2 programming or 7 day programming. Touch the **UP** or **DOWN** arrows to change the selection. The factory default is **7**.

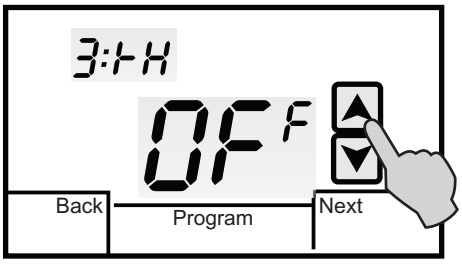


51 = 5+1+1 (Same schedule Mon-Fri and separate schedules for Sat and Sun)
52 = 5 + 2 (Same schedule Mon-Fri and Sat-Sun)
7 = 7 (7 individual day programming)

INSTALLER SETUP MENU

SELECTING TEMPORARY PROGRAM OVERRIDE

Menu 3:TH provides temporary program override. When **OFF**, (factory default) a change in setpoint will remain until the next scheduled event or a fixed override can be set from 1-12 hours. Use the **UP** or **DOWN** arrows to select override time.

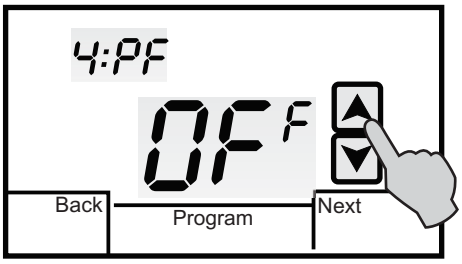


OFF = Provides override to next scheduled event
1-12 = Override to selected time (1 - 12 hours in 1 hour increments)

INSTALLER SETUP MENU

SELECTING PROGRAMMABLE FAN MODE

Menu 4:PF is the Programmable Fan option which allows selecting continuous or auto fan operation for each program event. The factory default is **OFF**. Use the **UP** or **DOWN** arrows to select Programmable Fan.



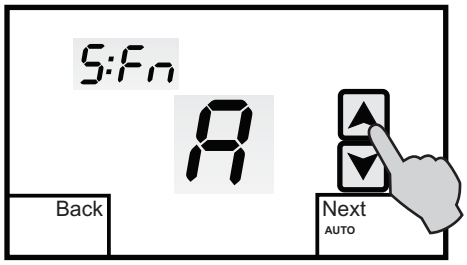
ON = Programmable Fan
OFF = No Programmable Fan

Refer to the User Manual for selecting continuous or auto fan for each scheduled event when the Programmable Fan option is ON.

INSTALLER SETUP MENU

SELECTING MODE

Menu 5:FN selects the mode of operation. The factory default is **A** for auto changeover. Touch the **UP** or **DOWN** arrows to change the selection.



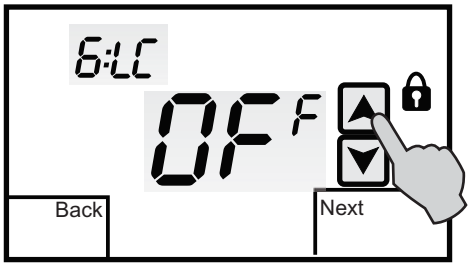
- = Manual Changeover
A = Auto Changeover (Heat / Cool / Auto / Off
H = Heat / Off
C = Cool / Off
Ao = Auto / Off

Note: In Manual Changeover configuration the heating and cooling setpoint can be the same.

INSTALLER SETUP MENU

SELECTING TOUCHSCREEN LOCK OPTIONS

Menu 6:LC allows you to prevent changes to all or part of the touchscreen functions. The factory default is **OFF**. Touch the **UP** or **DOWN** arrows to change the selection.

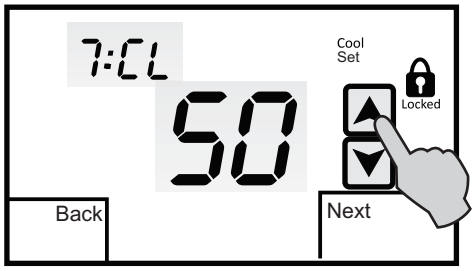


OFF	**= All functions unlocked**	**6**	**= Fan / Mode locked**
1	**= Program locked**	**7**	**= Fan / Program / Mode locked**
2	**= Mode locked**	**8**	**= Fan / Program / Mode / Clock locked**
3	**= Fan locked**		
4	**= UP / DOWN arrows locked**	**9**	**= All functions locked**
5	**= Clock locked**		

INSTALLER SETUP MENU

SELECTING THE COOLING SETPOINT LIMIT

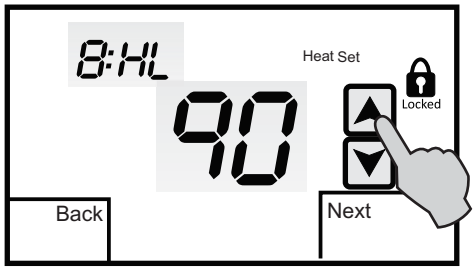
Menu 7:CL selects the minimum cooling setpoint. The factory default is **50**. Touch the **UP** or **DOWN** arrows to adjust the limit from 43° - 122°F.



INSTALLER SETUP MENU

SELECTING THE HEATING SETPOINT LIMIT

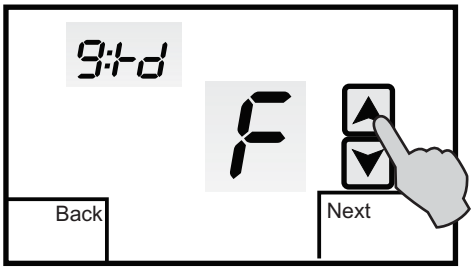
Menu 8:HL selects the maximum heating setpoint limit. The factory default is **90**. Touch the **UP** or **DOWN** arrows to adjust the limit from 41° - 120°F.



INSTALLER SETUP MENU

SELECTING THE TEMPERATURE DISPLAY

Menu 9:TD selects the temperature to be displayed in Fahrenheit or Celsius. The factory default is **F** (Fahrenheit). Touch the **UP** or **DOWN** arrows to change the display setting.

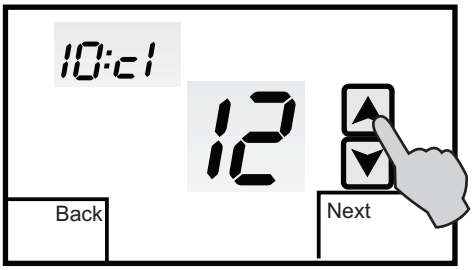


F = Fahrenheit
C = Celsius

INSTALLER SETUP MENU

SELECTING THE TIME FORMAT

Menu 10:CL selects the time format which can be 12 hour or 24 hour. The factory deault is **12** (12 hour). Touch the **UP** or **DOWN** arrows to change the format.

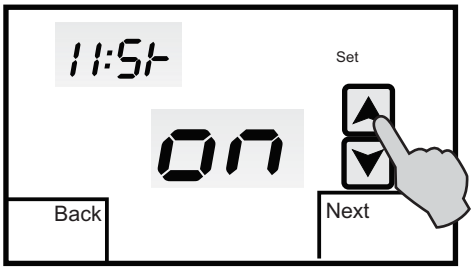


12 = 12 Hour
24 = 24 Hour (Military Time)

INSTALLER SETUP MENU

SELECTING THE SETPOINT DISPLAY OPTION

Menu 11:ST allows the option of continuously displaying the setpoint temperture with the space temperature or only the sepoint temperature. The factory default is **ON** (Setpoint Displayed). Touch the **UP** or **DOWN** arrows to change the display option.

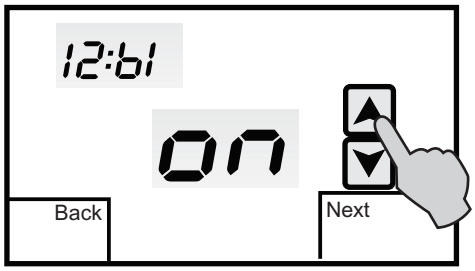


ON = Setpoint displayed
OFF = No sepoint displayed

INSTALLER SETUP MENU

SELECTING BACK LIGHT OPTION

Menu 12:BL allows you to select the back light option. The factory default is **ON**. Touch the **UP** or **DOWN** arrows to change the display option.

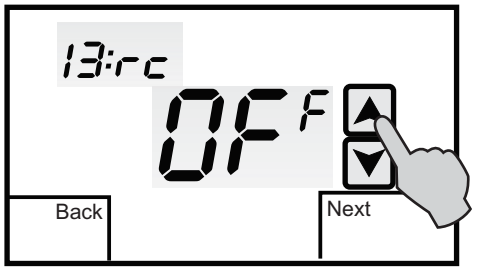


ON = Back Light on for 10 seconds when screen is touched
OFF = No Back Light
ALL = Back Light on high for 10 seconds when screen is touched and then low continuously. (Thermostat must be hardwired to 24VAC for this option)

INSTALLER SETUP MENU

SELECTING ADAPTIVE RECOVERY OPTION

Menu 13:RC allows you to select the Adaptive Recovery option when the thermostat is configured as programmable. Adaptive Recovery compares the space temperature deviation from setpoint and rate of recovery history to bring the equipment on and reach the setpont at the scheduled start time. The factory default is **OFF**. Touch the **UP** or **DOWN** arrows to select this option.

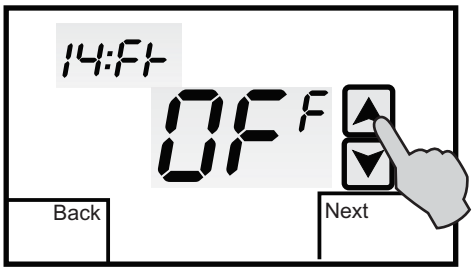


OFF = No Adaptive Recovery
ON = Adaptive Recovery On (For programmable mode only)

INSTALLER SETUP MENU

SELECTING FILTER REMINDER

Menu 14:FT allows you to select a time when the thermostat will display ***FLT*** as a reminder that the HVAC system filter(s) should be replaced. The factory default is **OFF**. Touch the **UP** or **DOWN** arrows to set the filter reminder time.



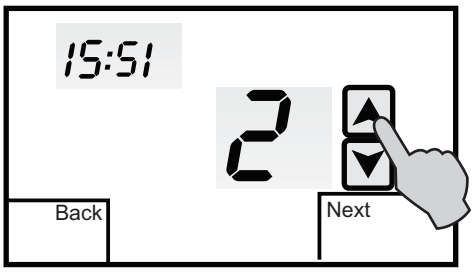
OFF = No filter reminder
010 = 100 Hours
100 = 1000 Hours (Up to 9,000 hours in 100 hour steps)

To reset the Filter Reminder, touch and hold Mode and Fan.

INSTALLER SETUP MENU

SELECTING FIRST STAGE HEATING AND COOLING DIFFERENTIAL OPTION

Menu 15:S1 is used to adjust the heating and cooling differential. The factory default is **2** (2°F). This represents the temperature above the cooling setpoint or below the heating setpoint when the equipment is energized. Touch the **UP** or **DOWN** arrows to change the differential.

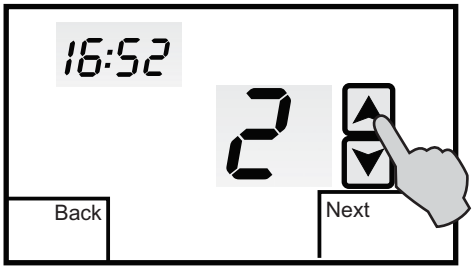


1 = 1°F Differential
2 = 2°F Differential
3 = 3°F Differential

INSTALLER SETUP MENU

SELECTING SECOND STAGE HEATING AND COOLING DIFFERENTIAL OPTION

Menu 16:S2 is used to adjust the second stage heating and cooling differential. The factory default is **2** (2°F). This represents the temperature above the first stage cooling differential or below the first stage heating differential when second stage is energized. There is a 3 minute time delay before second stage is energized. Touch the **UP** or **DOWN** arrows to change the differential.

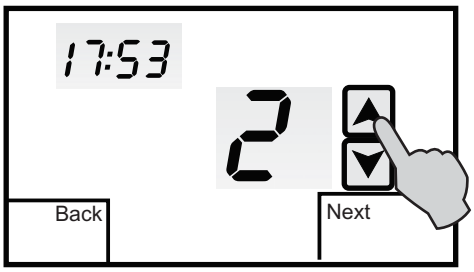


Adjustable from 1 - 10°F in 1° increments

INSTALLER SETUP MENU

SELECTING THIRD STAGE HEATING DIFFERENTIAL OPTION

Menu 17:S3 is used to adjust the third stage heating differential. The factory default is **2** (2°F). This represents the temperature below the second stage heating differential when third stage heat is energized. There is a 3 minute time delay before third stage heat is energized. Touch the **UP** or **DOWN** arrows to change the differential.

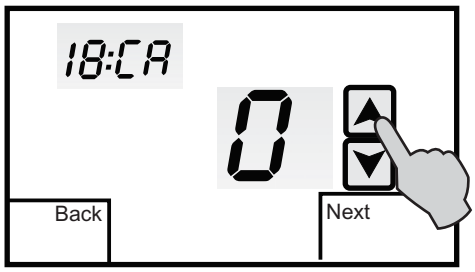


Adjustable from 1 - 10°F in 1° increments

INSTALLER SETUP MENU

SELECTING INTERNAL OR INDOOR REMOTE SENSOR CALIBRATION OPTION

Menu 18:CA is used to re-calibrate the thermostat internal sensor when 19:TT = OFF, or a single remote indoor sensor when 19:TT = RS . Touch the **UP** or **DOWN** arrows to adjust the calibration. The factory default is **0**.

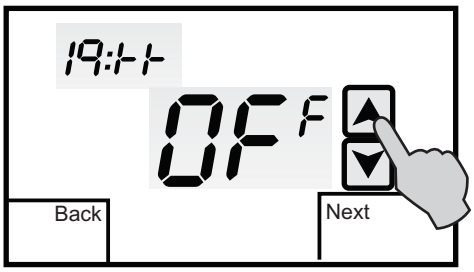


Adjustable from -9° to +9°F in 1° increments

INSTALLER SETUP MENU

SELECTING REMOTE SENSOR OPTION

Menu 19:TT allows you to select indoor remote sensor only or remote sensor with internal sensor for temperature averaging. The factory default is **OFF**. Touch the **UP** or **DOWN** arrows to select the desired remote sensor option.

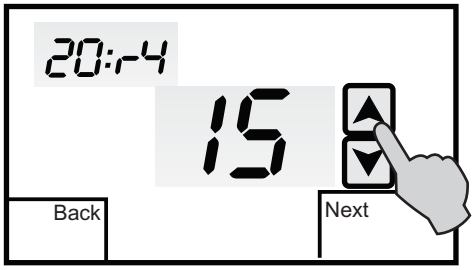


OFF = Internal sensor only
RS = Indoor remote sensor only
AU = Internal sensor with indoor remote sensor

INSTALLER SETUP MENU

SELECTING EQUIPMENT CONFIGURATION

Menu 20:R4 is used to select the specific equipment configuration. The factory default is **1S** for Heat / Cool and **H2** for heat pump and fossil fuel. Touch the **UP** or **DOWN** arrows to select the proper equipment configuration.



HEAT / COOL
1S = Single Stage
2S = Multi-stage

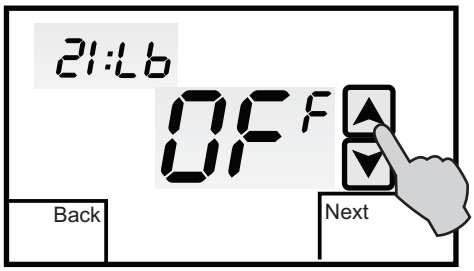
HEAT PUMP
OFF = 1 Heat / 1 Cool
H2 = 2 Heat / 1 Cool
H3 = 3 Heat / 2 Cool

FOSSIL FUEL
H2 = 2 Heat / 1 Cool
H3 = 3 Heat / 2 Cool

INSTALLER SETUP MENU

SELECTING LOW BALANCE POINT OPTION

Menu 21:LB allows you to select a low balance point setting when the thermostat is configured for Heat Pump or Fossil Fuel. When the outdoor temperature falls below the balance point setting, the compressor is locked out and only auxiliary electric heat or fossil fuel furnace is used for heating. The factory default is **OFF**. Touch the **UP** or **DOWN** arrows to select an low balance point setting.

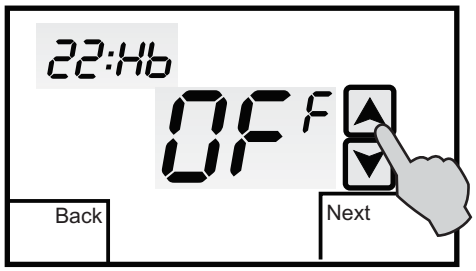


Adjustable from OFF, 1° to 77°F
Remote outdoor sensor must be used

INSTALLER SETUP MENU

SELECTING HIGH BALANCE POINT OPTION

Menu 22:HB allows you to select a high balance point setting when the thermostat is configured for Heat Pump or Fossil Fuel. When the outdoor temperature rises above the balance point setting, the auxiliary electric heat or fossil fuel furnace is locked out and only the heat pump is used for heating. The factory default is **OFF**. Touch the **UP** or **DOWN** arrows to select an low balance point setting.

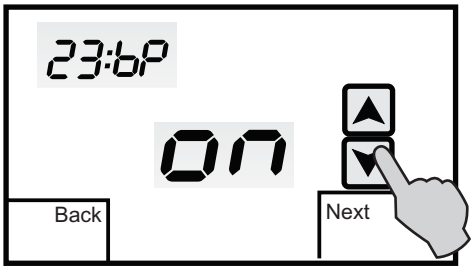


Adjustable from OFF, 32° to 122°F
Remote outdoor sensor must be used

INSTALLER SETUP MENU

SELECTING AUDIBLE BEEP OPTION

Menu 23:BP allows you to turn the audible beep on or off. The factory default is **ON**. Touch the **UP** or **DOWN** arrows to change the setting.

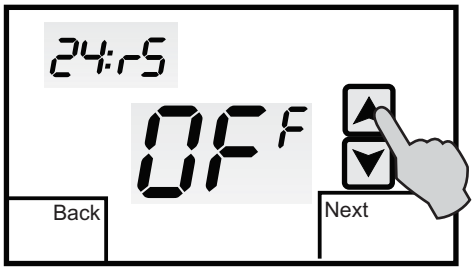


ON = Audible beep when screen is touched
OFF = No audible beep

INSTALLER SETUP MENU

SELECTING THE FACTORY DEFAULT OPTION

Menu 24:RS can be used to reset the thermostat to the original factory defaults. The factory default is **OFF**. To reset the thermostat, touch the **UP** or **DOWN** arrows and set to **ON**.

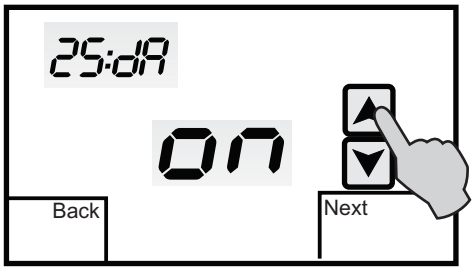


OFF = Factory default disabled
ON = Factory default enabled

INSTALLER SETUP MENU

SELECTING DAYLIGHT SAVINGS TIME OPTION

Menu 25:DS is used to enable Daylight Savings Time for the real-time clock. The factory default setting is **ON**. To disable this option, use the **UP** or **DOWN** arrows and set to **OFF**.



ON = Daylight Saving Time
OFF = Daylight Saving Time disabled

Refer to User Manual to set Daylight Saving Time Calender

REMOTE SENSOR INSTALLATION

REMOTE SENSORS

There are two types of remote sensors. The T-32-S1 is a single sensor that can be used indoors or outdoors. The T-32-S2 contains two sensors. A combination of both sensors can be used for indoor temperature averaging with or without the onboard sensor. Use separate 18-2 shielded cable when wiring sensors to prevent interference.

INDOOR SENSOR WIRING

When the T-32-S1 is used as an indoor sensor, the T-32-TS can be configured to allow only the remote sensor to control the temperature or a combination of remote and onboard sensors can be used for temperature averaging. Refer to 18:TT in the installer setup menu to select the proper remote sensor option. The indoor sensor wires to terminals S1 and SC.

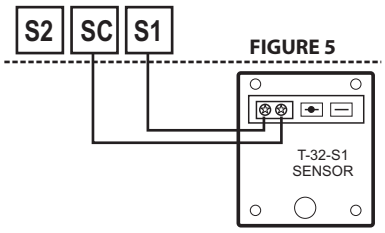


FIGURE 5

REMOTE SENSOR INSTALLATION

Locate the sensor in the same manner as the thermostat. Mount the sensor 18" away from any outside wall. Do not install the sensor behind doors, in corners or other dead air spaces. Keep the sensor away from direct air flow, supply registers or near sources of heat such as lamps and appliances. The maximum wire length from the sensor to the thermostat is 300 feet. Use a separate 18-2 shielded cable for sensor wiring. Prior to wiring the sensor to the thermostat, use an ohm-meter or multi-meter to measure the resistance of the sensor. Measure at the end of the wires that will connect to the thermostat. Confirm the resistance value (within 5%) to the temperature where the sensor is mounted. Use a quality digital electronic thermometer to read the temperature at the sensor. Remove the sensor cover and place the thermometer probe next to the sensor element to verify an accurate reading. Disconnect power to the thermostat when wiring the sensor, strip only as much insulation off of the wires as necessary to provide a good contact with the terminals. The sensor is not polarity specific so either sensor lead may be connected to the SC or S1 terminals on the thermostat.

REMOTE SENSOR INSTALLATION

USING MULTIPLE SENSORS FOR TEMPERATURE AVERAGING

Multiple indoor remote sensors can be wired in series/parallel for temperature averaging. The total value of the sensors must equal 10KΩ @ 77° F. The onboard sensor is not part of the equation even if it is configured as part of the averaging circuit. However, when the onboard sensor is used with remote sensors, it represents 50% of the averaging value. Figure 6 illustrates two T-32-S2 sensors used for averaging.

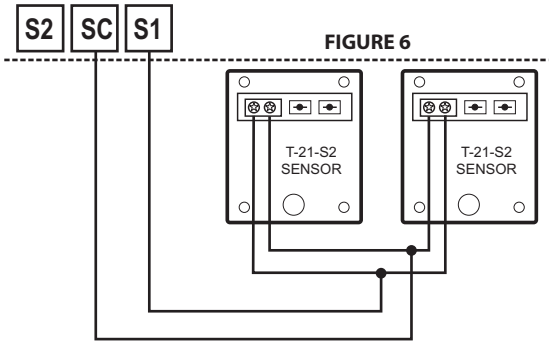


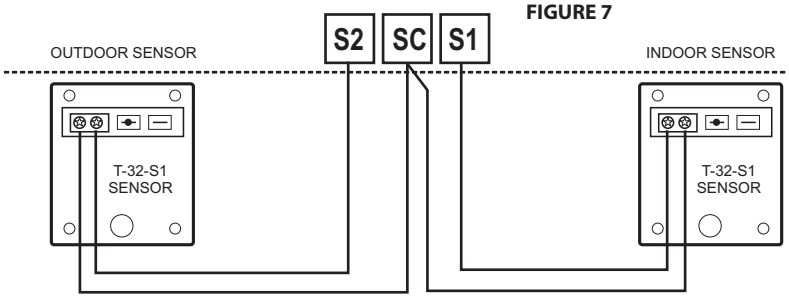
FIGURE 6

REMOTE SENSOR INSTALLATION

OUTDOOR SENSOR WIRING

When the T-32-S1 is used as an outdoor sensor, the T-32-TS thermostat will display the outside air temperature as well as control high and low balance points for heat pump and fossil fuel systems. Refer to 18:TT in the installer setup menu to select the proper sensor option. The outdoor sensor wires to the SC and S2 terminals on the thermostat. Figure 7 illustrates both an indoor and outdoor sensor configuration. Mount the sensor on a vertical exterior surface below an overhang. Choose a location protected from direct sunlight and exposure to excessive moisture. Follow the same wiring procedures as installing an indoor sensor.

FIGURE 7



TEMPERATURE CALIBRATION CHART

Temperature (°F)	Resistance (KΩ)	Temperature (F)	Resistance (KΩ)
30	34.6	70	11.9
40	26.1	80	9.4
50	19.9	90	7.4
60	15.3	100	5.9

NTC type 2 sensor - 10KΩ @ 77° F

TESTING

The T-32-TS incorporates a short-cycle timer which can be disabled during testing by setting slide switch 3 to the ON position. Once testing is completed, the time should be enabled by setting the switch to OFF.

TESTING FAN OPERATION

Touch **MODE** until the word **OFF** is displayed. Touch **FAN** until the words **Always On** appear. After a brief moment, the internal fan relay 'G' will energize and the system fan should operate. Touch **FAN** again until the word **Automatic** appears. After a brief moment, the internal fan relay will de-energize and the system fan will shut off.

TESTING CONVENTIONAL HEATING AND COOLING OPERATION

Touch **MODE** until the word **Heat** appears. Touch the **UP** arrow and raise the setpoint above the space temperature and the first stage differential. After a brief moment, the internal heating relay 'W1' will energize and the heating system should operate. The word **Heat** will flash continuously. If the thermostat has been configured for two stage heating, raise the setpoint above the second stage differential and the second stage heating relay 'W2' will energize. The word **Heat** will flash twice, pause and repeat the sequence to indicate second stage has been energized.

TESTING

Touch **MODE** until the word **Cool** appears. Touch the **DOWN** arrow and lower the setpoint below the space temperature and the first stage cooling differential. After a brief moment, the internal heating relay 'Y1' will energize and the cooling system should operate. The word **Cool** will flash continuously. If the thermostat has been configured for two stage cooling, lower the setpoint below the second stage differential and the second stage cooling relay 'Y2' will energize. The word **Cool** will flash twice, pause and repeat the sequence to indicate second stage has been energized.

TESTING CONVENTIONAL HEAT PUMP OPERATION

When the T-32-TS is configured for conventional heat pump operation, testing is the same as a heating and cooling system with the exception that the fan 'G' relay is always energized with compressor, auxiliary and emergency heat calls.

TESTING FOSSIL FUEL OPERATION

When the T-32-TS is configured for fossil fuel operation, testing is the same as a conventional heat pump system with the exception that the heat pump is never allowed to run when the fossil fuel furnace is energized. Whenever the thermostat calls for auxiliary heat, the compressor Y1 and/or Y2 relays are de-energized along with the fan 'G' relay and the 'W1' relay will energize the fossil fuel furnace.

TESTING

With the installation of an outdoor sensor, both high and/or low balance point control can be used to prioritize heat pump or fossil fuel operation based on a selected outdoor temperature.

TESTING LOW BALANCE POINT (Heat Pump or Fossil Fuel)
When an outdoor sensor is used with the T-32-TS, Installer Option 21:LB allows you to select a low balance point temperature. When the outdoor temperature falls below the low balance point setting, the Y1 and/or Y2 compressor relays will be bypassed and only the W1 (auxiliary heat) relay will be energized. To test the low balance point setting, set 21:LB above the displayed outdoor temperature and force a call for heating. The W1 relay will energize and the compressor Y1 and/or Y2 relays will be bypassed. After testing, reset the low balance point temperature to a normal operating range.

TESTING HIGH BALANCE POINT (Heat Pump or Fossil Fuel)
High balance point is designed to prevent the W1 (auxiliary heat) relay from energizing when the outdoor temperature is above the balance point setting. To test the high balance point setting, set 22:HB in the installer options menu below the displayed outdoor temperature and force a call for heating by adjusting the thermostat setpoint

TESTING

above the first and/or second stage heating differential. The Y1 and/or Y2 compressor relays will be energized and the W1 (auxiliary heat) relay will be bypassed. After testing, reset the high balance point temperature to a normal operating range.

ADAPTIVE RECOVERY

Adaptive Recovery is only available in programmable mode (Installer Options Menu 13:RC = ON). The Adaptive Recovery function of the T-32-TS permits the user to program a time that a desired set temperature is required. The thermostat then calculates the most energy efficient time to energize the equipment to reach the setpoint at the designated time. The calculation involves a complex control algorithm that compares the space temperature deviation from setpoint and rate of recovery history.

BASIC TROUBLE SHOOTING

SYMPTOM	POSSIBLE FAULT AND REMEDY
No LCD display	If thermostat is battery powered only, remove battery compartment and check to see that the positive (+) and negative (-) ends of each battery are oriented properly. If thermostat is hardwired, remove the thermostat from the subbase and check for 24 Volts across terminals 'C' and 'R'. If no voltage, fault could be equipment or wiring related.
Thermostat can not be set for auto changeover	In the Installer Options menu, set 5:FN=A or AO for auto changeover. - = Manual Changeover A = Heat / Cool / Auto / Off H = Heat / Off C = Cool / Off AO = Auto / Off
Temperature display is inaccurate	Air from wall cavity may be leaking into rear of thermostat. Seal hole where wires enter subbase. Move lamps or other sources of heat away from thermostat.

BASIC TROUBLE SHOOTING

SYMPTOM	POSSIBLE FAULT AND REMEDY
Thermostat will not display outdoor temperature	**No outdoor sensor installed. Check wiring at outdoor sensor and sensor terminals on thermostat subbase. Outdoor sensor wires to terminals S2 and SC.**
Heat or Cool is flashing	**This is not a fault but indicates that the thermostat heating or cooling relay is energized.**
Lock icon is displayed when attempting to set a higher or lower setpoint	**This is not a fault. The thermostat heating and cooling limits may be preventing setting a temperature above or below the limit values. These values can be changed in the Installer Options menu.** **7:CL (Cooling Limit) can be set from 43° - 122° F.** **8:HL (Heating Limit) can be set from 41° - 120° F.** **Touchscreen lock option 6:LC may be set to 4 which prevents setpoint changes.**

BASIC TROUBLE SHOOTING

SYMPTOM	POSSIBLE FAULT AND REMEDY
Thermostat displays wrong temperature	The T-32-TS can be configured to display temperature in either Fahrenheit or Celsius. Check Installer Option menu 9:TD. F = Fahrenheit and C = Celsius.
The fan continues to run after a heating or cooling call is satisfied	The thermostat fan mode may be set to Always On. Touch the FAN icon and change it to Automatic. When the T-32-TS is configured for programmable operation, fan operation can be programmed for Automatic or Always On for any scheduled event. If the Programmable Fan feature is not required, set 4:PF in the Installer Option menu to OFF.
Some functions on the thermostat cannot be changed and a padlock icon is displayed	Lock values have been set. Refer to 6:CL in the Installer Option menu. To remove all lock values, set 6:CL = OFF.

T-32-TS SPECIFICATIONS

Input Voltage (Hardwired)	20-30 VAC 50/60 Hz
Relay Rating	24 VAC @ 1 Amp maximum per relay
Battery Power	(2) AAA 1.5 V
Operating Temperature	32° F to 150° F
Operating Humidity	0-95% (non-condensing)
Storage Temperature	32° F to 150° F
Size:	
Enclosure	5.0” W x 3.375” H x 1.0” D
LCD Display	3.75” W x 2.125” H
Back Light	LED
Short-cycle Delay	Off or 3 minutes
Displayed Temperature Resolution	1° F
Setpoint Ranges:	
Heating	41° F - 120° F
Cooling	43° F - 122° F
Limits:	
Heating (Factory default = 90° F)	Fully adjustable within heating setpoint range
Cooling (Factory default = 50° F)	Fully adjustable within cooling setpoint range
Onboard and Remote Sensors	NTC Type 2
Resistance	10KΩ @ 77° F
Tolerance	+/- 3% @ 77° F
Warranty	5 Years

JACKSON SYSTEMS

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06-1097-080212